

# PATENT ABSTRACTS OF JAPAN

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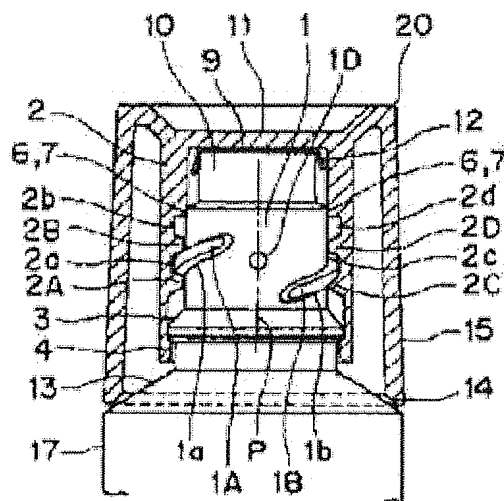
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## (54) CAP DEVICE OF CONTAINER HAVING CLICK-STOP MECHANISM

### (57)Abstract:

PROBLEM TO BE SOLVED: To maintain the sealing of a container after it is unsealed, to obtain the feeling of checking the completion of screwing, and to complete the fitting with a few number of turns.

SOLUTION: A cap device of a container in which a cap inner cylindrical part 2 is screwed in a container open head part 1 is provided with a click mechanism in which a ride-over elastic leg part 4 of the cap inner cylindrical part rides over a ride-over projection 3 of the container open head part with the rapid turn of a click at the position immediately before the screw terminating end of a screw part. In addition, a sealing mechanism is provided in which a container sealing width part 6 of the container open head part is brought into contact with a cap sealing width part 7 of the cap inner cylindrical part in a sealed condition when the rapid turn of the ride-over click is completed.



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### CLAIMS

[Claim(s)]

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[Claim 1] In a capping device of a container which an inner circumference thread part of a cap internal cylinder part screws in a periphery thread part of a container opening head, and bell-and-spigot wearing of a cap completes in bell-and-spigot end position of said thread part, While establishing a click mechanism which a container opening head gets over in a position before a bell and spigot of bell-and-spigot end position of said thread part, a cap internal cylinder part overcomes a projection, and an elastic leg overcomes, A capping device of a container which has a click stop mechanism forming a seal mechanism in which a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part contact by a sealed state.

[Claim 2] In a capping device of a container which has the click stop mechanism according to claim 1, a container opening head which constitutes a click mechanism gets over, and have provided a periphery thread part of a container opening head caudad, and a projection. A capping device of a container with which a cap internal cylinder part gets over, and an elastic leg has the click stop mechanism having provided caudad an inner circumference thread part of a cap internal cylinder part.

[Claim 3] Have provided a container seal part provided in a periphery of a container opening head which constitutes a seal mechanism in a capping device of a container which has the click stop mechanism according to claim 1 or 2 above a periphery thread part of a container opening head, and. A capping device of a container which has the click stop mechanism having provided a cap seal part provided in a cap internal cylinder part above an inner circumference thread part of a cap internal cylinder part.

[Claim 4] In a capping device of a container which has the click stop mechanism according to claim 1, 2, or 3, A capping device of a container which a click mechanism gets over, a projection gets over, and a near side consists of a comparatively loose inclined plane which goes to a projection crowning, and has a click stop mechanism, wherein the point consists of a comparatively steep inclined plane from a crowning.

[Claim 5] In a capping device of a container which has the click stop mechanism according to claim 1, 2, 3, or 4, A capping device of a container which a click mechanism gets over, a projection gets over, and a near side consists of an inclined plane which goes to a projection crowning, and has from a crowning a click stop mechanism, wherein the point consists of a steep incline which falls rapidly.

[Claim 6] A capping device of a container which has the click stop mechanism a click mechanism's getting over and having provided a flat part in a crowning of a projection in a capping device of a container which has the click stop mechanism according to any one of claims 1 to 5.

[Claim 7] In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 6, A capping device of a container which has a click stop mechanism forming a seal mechanism in which a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part contact by a sealed state in bell-and-spigot end position.

[Claim 8] In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 7, In said click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes a projection and an elastic leg overcomes, A capping device of a container which has a click stop mechanism forming a seal mechanism in which a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part contact by a sealed state.

[Claim 9] In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 8, During said section which gets over, and overcomes a projection and an elastic leg overcomes and which gets over, thrusts from a position and reaches end position, A capping device of a container which has a click stop mechanism forming a seal mechanism in which a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part contact by a sealed state.

[Claim 10] In a capping device of a container which has the click stop mechanism according to

any one of claims 1 to 9, From bell-and-spigot end position, rotate reversely a cap and Up to said position which gets over, and overcomes a projection and an elastic leg overcomes conversely. A capping device of a container which has a click stop mechanism forming a seal mechanism in which a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part contact by a sealed state.

[Claim 11]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 10, a click mechanism -- said -- it gets over, a projection is overcome and an elastic leg gets over -- it gets over and a position, A capping device of a container which has a click stop mechanism beginning from a position which is overcome by getting over and reaching a projection toward the crowning, and is produced in an elastic leg, and in which it gets over and resistance is lost rapidly.

[Claim 12]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 11, A capping device of a container which has a click stop mechanism, wherein said position which gets over, and overcomes a projection, an elastic leg overcomes, and click rotation of a cap ends is bell-and-spigot end position of a thread part.

[Claim 13]A capping device of a container which has a click stop mechanism, wherein a cap top plate contacts a container opening in bell-and-spigot end position of a thread part in a capping device of a container which has the click stop mechanism according to any one of claims 1 to 12.

[Claim 14]A capping device of a container which has a click stop mechanism, wherein a cap skirt part contacts a container shoulder in bell-and-spigot end position of a thread part in a capping device of a container which has the click stop mechanism according to any one of claims 1 to 13.

[Claim 15]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 14, A capping device of a container which has a click stop mechanism forming a seal mechanism in which either of a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part projects to the other party in a convex surface where curvature is smaller than the other party, and contacts by a sealed state.

[Claim 16]A capping device of a container which has a click stop mechanism, wherein a thread part of a capping device of a container which has the click stop mechanism according to any one of claims 1 to 15 is a multistart thread.

[Claim 17]A capping device of a container which has a click stop mechanism, wherein bell-and-spigot wearing of a cap is completed at an angle with an angle of rotation of less than 360 degrees in a capping device of a container which has the click stop mechanism according to any one of claims 1 to 16.

[Claim 18]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 17, A capping device of a container which has a click stop mechanism which forms in between a multistart thread of two sections which bell-and-spigot wearing of a cap completes at an angle with an angle of rotation of less than 180 degrees to a periphery thread part of a container opening head on both sides of a party line of a forming mold [Claim 19]A capping device of a container which has a click stop mechanism, wherein an inner

circumference thread part of a cap internal cylinder part consists of four sections to a multistart thread of two sections of a periphery thread part of a container opening head in a capping device of a container which has the click stop mechanism according to claim 16, 17, or 18 [Claim 20]In

a capping device of a container which has the click stop mechanism according to claim 16, 17, 18, or 19, A capping device of a container which has a click stop mechanism providing a protuberance form thread part which turns into a part of periphery thread part on a party line of a forming mold to a multistart thread of two sections of a periphery thread part of a container opening head [Claim 21]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 20, A capping device of a container which has a click stop mechanism, wherein an inner circumference thread part of a cap internal cylinder part screws in a periphery thread part of a container opening head only while a container opening head which constitutes a click mechanism gets over, a cap internal cylinder part overcomes a projection, and

an elastic leg gets over and thrusts and reaching end position [Claim 22] A capping device of a container which has a click stop mechanism consisting of two or more pieces of a resilient leg which have the elastically contacting piece in which it got over and an elastic leg provided a slit for every prescribed interval in a capping device of a container which has the click stop mechanism according to claim 1 to 21.

[Claim 23] In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 22, A capping device of a container which has a click stop mechanism consisting of an elastic deformation member which a cap internal cylinder part can get over, and a container opening head can get over to an elastic leg, and can project in elastic deformation.

[Claim 24] In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 23, A capping device of a container which has a click stop mechanism, wherein a cap internal cylinder part gets over, a container opening head gets over to an elastic leg and a projection consists of hard members, such as hard synthetic resin, glass, and metal.

[Claim 25] A capping device of a container which has a click stop mechanism, wherein a container seal part consists of hard members, such as hard synthetic resin, glass, and metal, to a cap seal part of a seal mechanism in a capping device of a container which has the click stop mechanism according to any one of claims 1 to 24.

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**DETAILED DESCRIPTION**

[Detailed Description of the Invention]

[0001]

[Field of the Invention] After opening this invention, it can maintain seal of a container, and it relates to the capping device of the container which has a click stop mechanism which can be constituted so that the feel which checks bell-and-spigot completion may be acquired and wearing may be completed at small number of rotations.

[0002]

[Description of the Prior Art] Although they are used for a couple by the screw thread provided along with the spiral of the outside of a body, a male screw with a slot, and the screw thread provided along with the spiral inside a body and a female screw with a slot, always becoming and the screw is called the one-section screw, the two-section screw, and the multistart thread by the number of the spirals which constitute the screw thread, On these Descriptions, more than a two-section screw shall be called a multistart thread, and a two-section screw shall also be contained in a multistart thread. Now, if a number of start is set to  $n$ , in the screw pitch  $p$  Becoming, the progress (lead)  $L$  of a male screw will be  $L=np$  by one revolution of a female screw.

[0003] In the screw of a cap of the tube vessel etc. which wearing was completed with the one-touch feeling of small number of rotations, or were constituted so that it might break away. If the pitch  $p$  is enlarged and one revolution also carries out less than 90 degrees or at least not less than 90 degrees of female screws of a cap from half rotation to the male screw of the screw

head part of a container, wearing is completed and that from which it secedes is convenient.

[0004]

[Problem(s) to be Solved by the Invention]In this case, for example, with the screw of a cap of a hermetic container etc., powerful binding power is not obtained, but a screw loosens easily, and only the part which detached and attached easily by enlarging the pitch  $p$  has SUBJECT from which sufficient sealing performance is no longer acquired.

[0005]

[Means for Solving the Problem]Then, in a capping device of the container according to claim 1 which an inner circumference thread part of a cap internal cylinder part screws in a periphery thread part of like and a container opening head, and bell-and-spigot wearing of a cap completes in bell-and-spigot end position of said thread part this invention, While establishing a click mechanism which a container opening head gets over in a position before a bell and spigot of bell-and-spigot end position of said thread part, a cap internal cylinder part overcomes a projection, and an elastic leg overcomes, A container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part tend to provide a capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state.

[0006]According to the capping device of a container which has a click stop mechanism concerning this invention. In [ if a cap is thrust into a container opening head ] a last position of bell-and-spigot end position of a thread part, When [ of a container opening head which constitutes a click mechanism ] it gets over, a cap internal cylinder part overcomes a projection and an elastic leg gets over, it gets over, and wearing elasticity powerful on a cap is obtained by elastic force, and can prevent slack of a screw, and. A feel which thrusts by click sudden rotation and checks completion is acquired, and can be sure of wearing of a positive cap, And while it can prevent binding a cap tight superfluously, When a container seal part which was provided in a periphery of a container opening head which constitutes a seal mechanism of this invention simultaneously with a click operation, and a cap seal part provided in a cap internal cylinder part contact by a sealed state, sufficient sealing performance will be acquired.

[0007]Therefore, wearing is completed with one-touch feeling of small number of rotations which is called 60 degrees or less and 90 degrees or less, or satisfaction is acquired by breaking away, and the user can get a feeling of attachment and detachment of a comfortable cap, and. With a screw of a cap of a tube vessel etc. which were constituted such, even if it is a case where enlarged the pitch  $p$ , and it detaches and attaches easily by little rotation, Sufficient sealing performance for a cap will be acquired by a seal mechanism in which a click mechanism gets over, contact in response to elasticity, and a sealed state is maintained, and slack of a screw can also be prevented.

[0008]In a bell-and-spigot trailer of a thread part, though a crevice has arisen in a container opening and a top plate section, With a seal mechanism in which a click mechanism gets over, contact in response to elasticity, and a sealed state is maintained. Sufficient sealing performance for a cap will be acquired, when a seal currently stuck on a container opening before container opening was removed at the time of use, or when a sealant of a top plate section in a cap is removed, sufficient sealing performance is acquired and the seal reliability of a cap can be improved.

[0009]In a capping device of a container which has the click stop mechanism according to claim 1, a container opening head which constitutes a click mechanism overcomes this invention, and have provided a periphery thread part of a container opening head caudad, and a projection. A cap internal cylinder part gets over and a capping device of a container with which an elastic leg has the click stop mechanism having provided caudad an inner circumference thread part of a cap internal cylinder part is provided. a click mechanism is constituted — by getting over, a periphery thread part of a container opening head is provided caudad, and a projection. By getting over, when an elastic leg is the composition of having provided caudad an inner circumference thread part of a cap internal cylinder part, since it can get over and an elastic leg can be provided in the skirt part side of an inner circumference thread part lower part of a cap internal cylinder part, a click mechanism is constituted in a description of Claim 1 — getting

over, and a projection being provided above a periphery thread part of a container opening head, and. It will get over and an elastic leg can manufacture a cap easily as compared with composition provided in the upper part inner part of an inner circumference thread part of a cap internal cylinder part.

[0010]Have provided a container seal part provided in a periphery of a container opening head which constitutes a seal mechanism in a capping device of a container which has the click stop mechanism according to claim 1 or 2 above a periphery thread part of a container opening head, and this invention. A capping device of a container which has the click stop mechanism having provided a cap seal part provided in a cap internal cylinder part above an inner circumference thread part of a cap internal cylinder part is provided. In a capping device of a container which has the click stop mechanism according to claim 1 or 2, in order to constitute a seal mechanism, are materialized by constituting a little narrowly to a container seal part of a periphery of a container opening head so that a cap seal part provided in a cap internal cylinder part may stick, but. When a periphery thread part provides a container seal part caudad in the click mechanism according to claim 1 or 2, As opposed to making larger than an outer diameter of a container periphery thread part an inside diameter of a cap seal part which an inner circumference thread part of a cap internal cylinder part provided caudad, In providing a container seal part and a cap seal part above a thread part, An outer diameter of a container seal part which could be small constituted from an outer diameter of a container periphery thread part suitably, therefore was provided above a vessel head periphery thread part will also correspond, and an inside diameter of a cap seal part can be constituted small, and can be made small lightweight rational composition which filled a necessary and sufficient condition for this invention.

[0011]In a capping device of a container with which this invention has the click stop mechanism according to claim 1, 2, or 3, A click mechanism gets over, a projection gets over, a near side consists of a comparatively loose inclined plane which goes to a projection crowning, and the point provides from a crowning a capping device of a container which has a click stop mechanism consisting of a comparatively steep inclined plane. When according to the above-mentioned composition a container opening head gets over, a cap internal cylinder part overcomes a projection and an elastic leg gets over at the time of wearing, It can get over comparatively smoothly by a comparatively loose inclined plane which gets over and goes to a projection crowning from a near side, Get over, sometimes carry out click sudden rotation in a steep inclined plane, and a light click feeling is obtained, When rotating reversely in the direction which positive bolting torque is acquired by steep inclined plane after wearing, and secedes from a cap, A steep inclined plane receives comparatively strong rotational resistance, and locking of a cap is made certainly, and further, when seceding from a cap, it can secede from a cap at a stretch with click sudden rotation by a steep inclined plane at a one-touch type.

[0012]In a capping device of a container with which this invention has the click stop mechanism according to claim 1, 2, 3, or 4, A click mechanism gets over, a projection gets over, a near side consists of an inclined plane which goes to a projection crowning, and the point provides from a crowning a capping device of a container which has a click stop mechanism consisting of a steep incline which falls rapidly. According to the above-mentioned composition, a click feeling by click sudden rotation of projection riding \*\*\*\*\* accompanying cap attachment and detachment, positive bolting torque by a steep inclined plane after wearing, locking of a cap, a feeling of attachment and detachment of a one-touch type, etc. can be made more conspicuous.

[0013]In a capping device of a container which has the click stop mechanism according to any one of claims 1 to 5, this invention provides a capping device of a container which has the click stop mechanism a click mechanism's getting over and having provided a flat part in a crowning of a projection. According to the above-mentioned composition, by a flat part which a click mechanism overcame and was provided in a crowning of a projection. Since a large distance of click rotation can be taken after overcoming a projection, Bolting distance of a thread part binds tight only a part which becomes large, and it torque it not only can increase, but, Since a range in which contact with a container seal part and a cap seal part in a seal mechanism is possible can be taken from a place which got over in a flat part and whose resistance was lost, As it gets over and resistance and seal contact resistance cannot be lapped, rotational resistance of a cap

by a lap of a click mechanism and a seal mechanism can be reduced, rotation of a cap can be made smooth, and a sealing function can be ensured according to increase of the range of both seal parts which can be seal contacted.

[0014]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 6, In bell-and-spigot end position, a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part provide a capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state. According to the above-mentioned composition, since a seal mechanism will be in a sealed state when a cap carries out click sudden rotation according to a click mechanism, thrusts and arrives at end position, a capping device of an ideal container with which a sealing function and a click stop function agreed can be provided.

[0015]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 7, In said click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes a projection and an elastic leg overcomes, A container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part provide a capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state. In a click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which according to the above-mentioned composition gets over, and overcomes a projection and an elastic leg overcomes, Also in a user who judges that bolting operation of a cap was completed by click rotation end position without thrusting to bell-and-spigot end position since a seal part of a seal mechanism was in a sealed state, and does not bind tight any more, A sealed state can be secured in a click stop, and it is effective when seal resistance is comparatively strong in a sealed state of a seal part of a seal mechanism especially.

[0016]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 8, During said section which gets over, and overcomes a projection and an elastic leg overcomes and which gets over, thrusts from a position and reaches end position, A container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part provide a capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state. During the section which according to the above-mentioned composition gets over, and overcomes a projection and an elastic leg overcomes and which gets over, thrusts from a position and reaches end position, Since a seal part of a seal mechanism is maintained by sealed state also in which position, it will be concerned with a position of a cap after the completion of click rotation by a click mechanism, and a sealed state will be maintained that there is nothing.

[0017]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 9, From bell-and-spigot end position, rotate reversely a cap and Up to said position which gets over, and overcomes a projection and an elastic leg overcomes conversely. A container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part provide a capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state. According to the above-mentioned composition, from bell-and-spigot end position, rotate reversely a cap and Up to said position which gets over, and overcomes a projection and an elastic leg overcomes conversely. From a seal part of a seal mechanism being maintained by sealed state also in which position. Like a case of composition of Claim 10, it is concerned with a position of a cap after the completion of click rotation by a click mechanism, and even if there is nothing and it carries out counterrotation movement, unless it overcomes a click mechanism and secedes from it, a sealed state will be maintained.

[0018]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 10, a click mechanism -- said -- it gets over, a projection is overcome and an elastic leg gets over -- it gets over and a position, A capping device of a container which has a click stop mechanism beginning from a position which is overcome by

getting over and reaching a projection toward the crowning, and is produced in an elastic leg, and in which it gets over and resistance is lost rapidly is provided. according to the above-mentioned composition, a click mechanism gets over, a projection is overcome, an elastic leg gets over, and click sudden rotation is started -- it getting over and a position, Since it gets over and begins from a projection or a position which is overcome, is overcome regardless of shape and composition of an elastic leg, and is produced in an elastic leg and in which it gets over and resistance is lost rapidly, publicly known various click mechanisms can be adopted conventionally, without being limited by structure of working example, etc. in the technical scope.

[0019]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 11, A capping device of a container which has a click stop mechanism, wherein said position which gets over, and overcomes a projection, an elastic leg overcomes, and click rotation of a cap ends is bell-and-spigot end position of a thread part is provided. From a position which click rotation of a cap ends being bell-and-spigot end position of a thread part according to the above-mentioned composition. Wearing of a cap will be completed and a sealed state of a seal mechanism will also be acquired, and it will loosen and can equip with a cap that there is nothing at the same time click rotation of a cap is completed.

[0020]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 12, A capping device of a container which has a click stop mechanism, wherein a cap top plate contacts a container opening in bell-and-spigot end position of a thread part is provided. According to the above-mentioned composition, in a stage where a click mechanism got over, wearing elasticity powerful on a cap was obtained by elasticity in bell-and-spigot end position of a thread part, and a sealed state by contact of a cap was acquired by a seal mechanism. When a cap top plate contacts a container opening, a container opening will also be sealed directly, high sealing performance will be acquired, and impossible bell-and-spigot operation beyond it can be prevented.

[0021]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 13, A capping device of a container which has a click stop mechanism, wherein a cap skirt part contacts a container shoulder in bell-and-spigot end position of a thread part is provided. If according to the above-mentioned composition the pitch  $p$  is enlarged and a spiral of a screw is lessened with a screw of a cap of a tube vessel etc. which were constituted so that it might equip or break away with one-touch feeling of small number of rotations, will become easy to produce backlash on a cap to a container opening head, but. In this case, when a cap skirt part contacts a container shoulder in bell-and-spigot end position of a cap, a mounting state where a cap was stabilized will be maintained.

[0022]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 14, Either of a container seal part provided in a periphery of a container opening head and a cap seal part provided in a cap internal cylinder part projects to the other party in a convex surface where curvature is smaller than the other party. A capping device of a container which has a click stop mechanism forming a seal mechanism in which it contacts by a sealed state is provided. When according to the above-mentioned composition either of a container seal part of a seal mechanism and a cap seal part projects to the other party in a convex surface where curvature is smaller than the other party and contacts by a sealed state, It compares, when contacting by a contact surface and contact resistance with big large field and field of curvature, Since it is the shape which a convex surface where curvature is small can project to the other party, and can contact certainly and smoothly with small resistance by a small contact surface, and is easy to transform oneself or the other party elastically, absorbing a size error etc. and contacting by an adhesion condition can be performed easily.

[0023]This invention provides a capping device of a container which has a click stop mechanism, wherein a thread part of a capping device of a container which has the click stop mechanism according to any one of claims 1 to 15 is a multistart thread. According to the above-mentioned composition, can constitute so that the pitch  $p$  of a screw may be enlarged, a spiral of a screw may be lessened and it may equip or break away with one-touch feeling of small number of



rotations by using a multistart thread, and. A fitting state stable when an idling angle which opportunity of a part to have made it into multi-thread of screwing increases, and wearing takes it was able to be made small and a thread part of a container opening head and a cap contacted in the state of multi-thread can be acquired.

[0024]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 16, A capping device of a container which has a click stop mechanism, wherein bell-and-spigot wearing of a cap is completed at an angle with an angle of rotation of less than 360 degrees is provided. According to the above-mentioned composition, when bell-and-spigot wearing of a cap is completed at an angle with an angle of rotation of less than 360 degrees, it can constitute so that it may equip or secede from a capping device with one-touch feeling of small number of rotations.

[0025]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 17, A capping device of a container which has a click stop mechanism which forms in between a multistart thread of two sections which bell-and-spigot wearing of a cap completes at an angle with an angle of rotation of less than 180 degrees to a periphery thread part of a container opening head on both sides of a party line of a forming mold is provided. By having the composition which forms a multistart thread of two sections on both sides of a party line of a forming mold in between according to the above-mentioned composition, Since a party line is not given to a screw thread and a thread groove of a periphery thread part of a container opening head, a thread part with the smooth surface can be fabricated easily, and good shaping of die releasing is attained.

[0026]In a capping device of a container with which this invention has the click stop mechanism according to claim 16, 17, or 18, A capping device of a container which has a click stop mechanism, wherein an inner circumference thread part of a cap internal cylinder part consists of four sections to a multistart thread of two sections of a periphery thread part of a container opening head is provided. According to the above-mentioned composition, when an inner circumference thread part of a cap internal cylinder part consists of four sections to a multistart thread of two sections of a periphery thread part of a container opening head, with angle of rotation of so little cap. An opportunity for both to be engaged will arise and an engagement state where a screw thread of four sections prevented a backlash of a cap, and was stabilized in contact with a periphery thread part of a container opening head after engagement can be acquired.

[0027]In a capping device of a container with which this invention has the click stop mechanism according to claim 16, 17, 18, or 19, A capping device of a container which has a click stop mechanism providing a protuberance form thread part which turns into a part of periphery thread part on a party line of a forming mold to a multistart thread of two sections of a periphery thread part of a container opening head is provided. According to the above-mentioned composition, it can have sexual intercourse as the four-section screw formed in a cap side by having provided a partial thread part of protuberance form which becomes a part of other periphery thread parts of two sections on a party line of a forming mold, and a four-section screw, and can prevent backlash, and. A thread part with the smooth surface can be fabricated easily, and good shaping of die releasing is attained.

[0028]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 20, A container opening head which constitutes a click mechanism gets over, a cap internal cylinder part gets over to a projection, and an elastic leg contacts. Only while reaching \*\* bell-and-spigots end position, a capping device of a container which has a click stop mechanism, wherein an inner circumference thread part of a cap internal cylinder part screws in a periphery thread part of a container opening head is provided. According to the above-mentioned composition, a thread part screws from a place which constitutes a click mechanism and where it gets over at, and gets over to a projection at, and an elastic leg contacts at the time of cap wearing, overcome a click mechanism, reach bell-and-spigot end position, and wearing is completed, Conversely, since a cap will break away in a place which overcame a click mechanism by screwing of a thread part at the time of cap secession, A click mechanism will overcome attachment and detachment with a screw of a cap, they will be

limited only to the section, can constitute attachment-and-detachment rotation of a cap to the minimum, and can detach and attach a cap like one-touch.

[0029]In a capping device of a container with which this invention has the click stop mechanism according to claim 1 to 21, A capping device of a container which has a click stop mechanism consisting of two or more pieces of a resilient leg which have the elastically contacting piece in which it got over and an elastic leg provided a slit for every prescribed interval is provided. By consisting of two or more pieces of a resilient leg which have the elastically contacting piece in which it got over and an elastic leg provided a slit for every prescribed interval according to the above-mentioned composition, Even if a container opening head gets over and it sets up a projection for a long time greatly, a piece of a resilient leg can change greatly and it can respond, It gets over and an elastic leg gets over, and the comparatively large width W can be taken freely, it gets over, and wearing elasticity powerful on a cap is obtained by elastic force, and can prevent slack of a screw, and. Contact width of a container seal part and a cap seal part from which it is obtained certainly, and a feel which checks bell-and-spigot completion gets over, and constitutes a seal mechanism of this invention at the time of movement will be increased, and smooth and positive sealing performance will be acquired.

[0030]In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 22, A capping device of a container which has a click stop mechanism consisting of an elastic deformation member which a cap internal cylinder part can get over, and a container opening head can get over to an elastic leg, and can project in elastic deformation is provided. According to the above-mentioned composition, when [ of a container opening head which a cap internal cylinder part gets over and consists of an elastic deformation member to an elastic leg ] it gets over and a projection carries out elastic deformation, an elastic leg becomes possible [ getting over smoothly and overcoming a projection ]. In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 23, A cap internal cylinder part gets over and a capping device of a container which has a click stop mechanism characterized by a thing of a container opening head which it gets over and a projection consists of hard members, such as glass and metal, is provided to an elastic leg.

[0031]According to the above-mentioned composition, like glassware and a metal vessel, when [ of a container opening head ] it gets over and a projection consists of hard members, such as glass and metal, a cap internal cylinder part gets over, and an elastic leg can carry out elastic deformation, it can get over smoothly, and a projection can be overcome. In a capping device of a container with which this invention has the click stop mechanism according to any one of claims 1 to 24, A capping device of a container which has a click stop mechanism, wherein a container seal part consists of hard members, such as glass and metal, to a cap seal part of a seal mechanism is provided. According to the above-mentioned composition, when a container seal part of a seal mechanism consists of hard members, such as glass and metal, a cap seal part will carry out elastic deformation, will stick, and will maintain a sealed state.

[0032]

[Example]Working example illustrated below explains this invention in detail. In drawing 1, 2, drawing 5, drawing 6, and drawing 7, the male screw which has the screw thread 1A of two sections, the thread groove 1a and the screw thread 1B, and the thread groove 1b along with the spiral in which 1 is a male screw part of the cylindrical container opening head 10, and the outside separated angle of rotation 180 degrees mutually is formed. In the internal cylinder part 2 of the cap 20, along with the spiral of a 90-degree angle-of-rotation interval, the screw thread 2A of four sections, Have formed 2B, 2C, 2D and its thread groove 2a, 2b, and a female screw with 2c and 2d, for example, the screw threads 2A and 2C by the side of the female screw of the cap 20 engage with the thread grooves 1a and 1b of the male screw by the side of the container opening head 10, respectively, It constitutes so that it may screw in the male screw of two sections of the container opening head 10 where the female screw of two sections in four sections faces, Cap wearing angle of rotation which narrowed the idling angle interval when equipping with the female screw cap 20 at 90 degrees or less, and includes an idling angle can be made small, and can strengthen one-touch wearing feeling, and. As shown in drawing 1, screw

thread 2B of the female screw of two sections which is not screwed in the male screw of two sections of a vessel head and 2D can engage with the upper surface of the screw threads 1A and 1B, and the screwing state of a cap can be strengthened.

[0033]Of course, it is also possible to have composition which formed the multi-thread female screw which consists of a screw thread of the same number and a thread groove with a common multistart thread to the multi-thread male screw formed along with the spiral inside the cap inner cylinder part 2 including a two-section screw. In the figure, the partial thread parts 1C and 1D of the protuberance form which becomes a part of other periphery thread parts of two sections are formed on the party line P of a forming mold to the multistart threads 1A and 1B of two sections of the periphery thread part 1 of the container opening head 10. It can have sexual intercourse as the four-section screw formed in the cap side by having formed the partial thread parts 1C and 1D of the protuberance form which becomes a part of other periphery thread parts of two sections on the party line P of a forming mold, and a four-section screw, and can prevent backlash, and. A thread part with the smooth surface can be fabricated easily, and even if the thread parts 1C and 1D which become some four-section screws exist on the party line P, good shaping of die releasing is attained bordering on a party line. Like drawing 1, 2, or 4, even if the shape of the partial thread parts 1C and 1D is circular Yamagata-like, Like the description to drawing 5 or 6, although it may be an ellipse-like or may be rhomboid shape like the description to drawing 7 or 8, it is preferred that a touch area uses the latter shape of an ellipse or rhomboid shape of having been greatly suitable for bolting and backlash prevention of a screw, within limits which can maintain smooth nature without a mold.

[0034]3 constitutes the click mechanism which was provided in the thread part 1 bottom and which it gets over, and is a projection, and the cap internal cylinder part 20 overcomes and the elastic leg 4 overcomes. Get over like a description to drawing 2, and the projection 3 forms in between the gentle slope 3b where the upper part is loose on both sides of the top flat part 3a, and the lower part forms the rapid steep incline 3c.

As for the flat part 3a of said crowning, it is preferred that it is the flat face or convex surface which connects said both slant faces smoothly.

In the case of working example, it gets over like a description to drawing 3, and the elastic leg 4 consists of two or more pieces 4b of a resilient leg which have the elastically contacting piece 4a divided into the slit 5 for every prescribed interval provided in the female screw portion bottom in a tip part. The elastically contacting piece 4a consists of flat smooth convex shape which gets over and possesses the width N in the center section, and. Even if the piece 4b of a resilient leg consists of thick thin composition that large elastic deformation can be taken, and the container opening head 10 overcomes it and it sets up the projection 3 for a long time greatly, the piece 4a of a resilient leg can deform greatly, and it can respond, It can get over, the elastic leg 4 can get over, and the comparatively large width N can be taken freely, Wearing elasticity powerful on a cap is obtained, and can prevent the slack of a screw, releasing, when [ which elastic deformation was carried out in the extended direction, and was accumulated in it ] getting over, overcoming elasticity and overcoming and carrying out click sudden rotation of the projection 3, and. The contact width E of the container seal part and cap seal part from which it is obtained certainly, and the feel which checks bell-and-spigot completion gets over, and constitutes the seal mechanism of this invention at the time of movement, a contact position, and the flexibility of setting out of contact strength will be increased, and smooth and positive sealing performance will be acquired.

[0035]By getting over, while the number and interval can be changed suitably and the slit 5 of the elastic leg 4 can set them up according to the construction material of the cap internal cylinder part 20, for example, -- while being able to reduce the number of slits since it will get over, it will sometimes get over and the projection 3 will carry out elastic deformation greatly when it gets over and the projection 3 is rich in elasticity or pliability -- the structure of a click projection of a click mechanism -- a slit -- it can have unnecessary composition.

[0036]It will get over, and will get over with the width N of the flat part 3a of the crowning of the projection 3, the elastic leg 4b will get over, and it will be set up suitably by what width and strength the container seal part provided in the periphery of the container opening head

mentioned later and the cap seal part provided in the cap internal cylinder part are which positions, and sticks the width N. Namely, in [ get over with the top flat part width W, and ] near the bell-and-spigot end of cap wearing the width N, Although it completes in the position which the convex crowning of the elastically contacting piece 4a of convex shape gets over, and falls in the steep incline 3c exceeding the convex crowning of the projection 3, starting with the position which it gets over, and the elastically contacting piece 4a of the leg 4 gets over, and contacts the projection 3, and contacting mutually, It becomes an element which by what width and strength it sticks by in which depression backward position a depression front stirrup completes contact by a container seal part and a cap seal part beginning contact determines.

[0037]In drawing 1 thru/or 3, 6 is provided so that the cap seal part 7 which is a container seal part provided in the upper part periphery of the thread part 1 of the container opening head 10, and was provided in the thread part upper part of the cap internal cylinder part 2 may be contacted by the seal width E. That is, in the case of working example, the peripheral shape of the container seal part 6 is slightly fabricated greatly from the inner circumference shape of the cap seal part 7, and it constitutes so that both may be flexibly attached by the seal width E in the culmination of cap wearing. therefore, although influenced by the construction material of the container opening head 10 and the head 2 in a cap, from the peripheral shape of the cap seal part 7, by which the peripheral shape of the container seal part 6 is fabricated greatly, bond strength is influenced, and many things can be boiled and it can set up in a design stage.

Generally, since the cap 20 possesses the elastic deformation leg 4, even if the construction material of a container opening head is the hard product made from a plastic, glass, or metal etc. in \*\*\*\*\* and this case as the cap seal part 7 is an elastic deformation member, the cap seal part 7 will carry out elastic deformation, and will stick. In the seal width E, in working example, although indicated in the diameter of the same, it can also have composition which forms a loose taper in a bore diameter and increases a degree of adhesion gradually.

[0038]In working example of drawing 7, the container seal part 6 provided in the periphery of the container opening head 10 constitutes the seal mechanism in which project to the other party in the convex surface 6a where curvature is small, and it contacts by a sealed state between the seal width E.

When the container seal part 6 of a seal mechanism projects to the other party's cap seal part 7 in the convex surface 6a where curvature is small and contacts it by a sealed state, It compares, when contacting by a contact surface and contact resistance with big large field and field of curvature, Since it is the shape which can contact certainly and smoothly with the small resistance according [ the convex surface 6a where curvature is small ] to a small contact surface, and is easy to transform oneself or the other party elastically, absorbing a size error etc. and contacting by an adhesion condition in the section of the seal width E can be performed easily.

[0039]In this case, when either of the container seal part 6 of a seal mechanism and the cap seal part 7 projects to the other party in the convex surface where curvature is smaller than the other party and contacts by a sealed state, the same sealing effect is acquired, and. Seal intensity, a seal position, etc. can be easily set up from the size of the seal width E by adjusting the other party's contact surface. Since the upside surface 6b of the convex surface 6a of the container seal part 6 is making the loose inclined plane in the case of working example of drawing 7, It constitutes so that the cap seal part 7 smooth at the time of cap wearing may be contacted smoothly and a sealed state may be maintained, and at the time of cap secession, comparatively, adhesion resistance acts greatly and has been carried out to the composition of the tendency to maintain an attachment state. The cap seal part 7 can be constituted in this case as an inclined plane where an aperture narrows gradually, can constitute so that adhesion resistance may become the maximum in a click stop position, and. It can constitute as an inclined plane which extends the cap seal part 7 a little by a click sudden rotary part, and reduces adhesion resistance and where an aperture narrows gradually near click rotation end position, and it can also constitute so that adhesion resistance may become the maximum in a click stop position.

[0040]In this invention, in the capping device of the container which has the above-mentioned

click stop mechanism, a click mechanism gets over, the projection 3 gets over, a near side consists of the comparatively loose inclined plane 3b which goes to the projection crowning 3a, and a crowning to the point consists of the comparatively steep inclined plane 3c. Therefore, when a container opening head gets over, a cap internal cylinder part overcomes the projection 3 and the elastic leg 4 gets over at the time of wearing. It can get over comparatively smoothly by the comparatively loose inclined plane 3b which gets over and goes to a projection crowning from a near side, Get over, sometimes carry out click sudden rotation in the steep inclined plane 3c, and a light click feeling is obtained, When rotating reversely in the direction which positive bolting torque is acquired by the steep inclined plane 3c after wearing, and secedes from a cap, The steep inclined plane 3c receives comparatively strong rotational resistance, and locking of a cap is made certainly, and further, when seceding from a cap, it can secede from a cap at a stretch with the click sudden rotation by the steep inclined plane 3c at a one-touch type.

[0041]In this invention, in the capping device of the container which has the above-mentioned click stop mechanism, a click mechanism gets over, the projection 3 gets over, a near side consists of the inclined plane 3b which goes to a projection crowning, and a crowning to the point consists of the steep incline 3c which falls rapidly.

Therefore, the click feeling by click sudden rotation of projection riding \*\*\*\*\* accompanying cap attachment and detachment, the positive bolting torque by the steep inclined plane 3c after wearing, locking of a cap, a feeling of attachment and detachment of a one-touch type, etc. can be made more conspicuous.

[0042]In this invention, in the capping device of the container which has the above-mentioned click stop mechanism, a click mechanism gets over and the flat part 3a is formed in the crowning of the projection 3.

By therefore, the flat part 3a which the click mechanism overcame and was provided in the crowning of the projection 3. Since a large distance of click rotation can be taken after overcoming a projection, The bolting distance of a thread part binds tight only the part which becomes large, and it torque it not only can increase, but, Since the range in which contact with the container seal part 6 and the cap seal part 7 in a seal mechanism is possible can be taken from the place which got over in the flat part and whose resistance was lost, As it gets over and resistance and seal contact resistance cannot be lapped, the rotational resistance of the cap by the lap of a click mechanism and a seal mechanism can be reduced, rotation of a cap can be made smooth, and a sealing function can be ensured according to increase of the range of both seal parts which can be seal contacted.

[0043]In the capping device of the container with which this invention has the above-mentioned click stop mechanism, By composition which formed the seal mechanism in which the container seal part 6 provided in the periphery of the container opening head and the cap seal part 7 provided in the cap internal cylinder part contacted by a sealed state in bell-and-spigot end position. Since a seal mechanism will be in a sealed state when a cap carries out click sudden rotation according to a click mechanism, thrusts and arrives at end position, the capping device of the ideal container with which the sealing function and the click stop function agreed can be provided.

[0044]In the capping device of the container which has the above-mentioned click stop mechanism in this invention, In said click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes, the container seal part 6 provided in the periphery of the container opening head and the cap seal part 7 provided in the cap internal cylinder part formed the seal mechanism in which it contacted by a sealed state.

Therefore, in the click rotation completion position [ it gets over it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes, Also in the user who judges that bolting operation of the cap was

completed by click rotation end position without thrusting to bell-and-spigot end position since the seal parts 6 and 7 of the seal mechanism were in the sealed state, and does not bind tight any more. A sealed state can be secured in a click stop, there is what click rotation end position is especially decided for by the size of seal resistance when seal resistance is comparatively strong in the sealed state of the seal part of a seal mechanism, and it is effective.

[0045]In the capping device of the container which has the above-mentioned click stop mechanism in this invention, The container seal part 6 provided in the periphery of the container opening head and the cap seal part 7 provided in the cap internal cylinder part have the composition which formed the seal mechanism in which it contacted by a sealed state during said section which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes and which gets over, thrusts from a position and reaches end position.

Therefore, during the section which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes and which gets over, thrusts from a position and reaches end position, Since the seal parts 6 and 7 of a seal mechanism are maintained by the sealed state also in which position, it will be concerned with the position of the cap after the completion of click rotation by a click mechanism, and a sealed state will be maintained that there is nothing.

[0046]In the capping device of the container which has the above-mentioned click stop mechanism in this invention, The container seal part 6 which rotated reversely the cap from bell-and-spigot end position, and was provided in the periphery of the container opening head before said position which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes conversely, and the cap seal part 7 provided in the cap internal cylinder part formed the seal mechanism in which it contacted by a sealed state.

From bell-and-spigot end position, rotate reversely a cap and Therefore, up to said position which gets over, and overcomes the projection 3 and the elastic leg 4 overcomes conversely. Since the seal part of a seal mechanism is maintained by the sealed state also in which position, it is concerned with the position of the cap after said completion of click rotation according to a click mechanism similarly, and a sealed state will be maintained, unless it overcomes a click mechanism and secedes from it, even if there is nothing and it carries out counterrotation movement.

[0047]In the capping device of the container with which this invention has the above-mentioned click stop mechanism, a click mechanism — said — it gets over, the projection 3 is overcome and the elastic leg 4 gets over — it gets over and a position, By having the composition beginning from the position which is overcome by getting over and reaching the projection 3 toward the crowning 3a, and is produced in the elastic leg 4, and in which it gets over and resistance is lost rapidly, a click mechanism gets over, the projection 3 is overcome, the elastic leg 4 gets over, and click sudden rotation is started — it getting over and a position, Since it gets over and begins from a projection or the position which is overcome, is overcome regardless of the shape and composition of an elastic leg, and is produced in the elastic leg 4 and in which it gets over and resistance is lost rapidly, publicly known various click mechanisms can be adopted conventionally, without being limited by the structure of working example, etc. in the technical scope.

[0048]In this invention, it has the composition in which said position which gets over, and overcomes the projection 3, the elastic leg 4 overcomes, and click rotation of a cap ends is bell-and-spigot end position of a thread part in the capping device of the container which has the above-mentioned click stop mechanism.

Therefore, wearing of a cap will be completed and the sealed state of a seal mechanism will also be acquired, and it will loosen and can equip with a cap that there is nothing at the same time click rotation of a cap is completed, since the position which click rotation of a cap ends is bell-and-spigot end position of a thread part.

[0049]This invention provides the capping device of the container which has a click stop

mechanism, wherein the cap top plate 11 contacts the container opening 9 in the bell-and-spigot end position of a thread part. Although a click mechanism will get over, wearing elasticity powerful on a cap will be obtained by elasticity like the above-mentioned in the bell-and-spigot end position of a thread part and the sealed state by contact of a cap will be acquired by a seal mechanism. In the seal stage, when the cap top plate 11 contacts the container opening 9, the container opening 9 will also be sealed directly, high sealing performance is acquired, and the impossible bell-and-spigot operation beyond it can be prevented. In the case of working example, it sets before opening. Although the sealant 12 which consists of aluminum foil etc. is welded by the container opening 9, it constitutes so that the cap top plate 11 may contact the container opening 9 in the condition of use which removed the sealant 12.

[0050] This invention provides the capping device of the container which has a click stop mechanism, wherein the cap skirt part 14 contacts the container shoulder 13 in the bell-and-spigot end position of a thread part. In the case of working example, the cap skirt part 14 is formed in the cap outer tube section 15 provided in the periphery of said cap internal cylinder part 2, and is in contact with the inclined plane of the container shoulder 13 which was overcome and was provided via the neck 16 under the projection 3 in perimeter. If the pitch  $p$  is enlarged and the spiral of a screw is lessened with the screw of a cap of the tube vessel etc. which were constituted so that it might equip or break away with the one-touch feeling of small number of rotations, will become easy to produce backlash on the cap 20 to the container opening head 10, but. In this case, when the cap skirt part 14 contacts the container shoulder 13 in the bell-and-spigot end position of the cap 20, the mounting state where the cap 20 was stabilized will be maintained.

[0051] In the composition of above-mentioned working example, if it has the container drum part 17 and the cap internal cylinder part 2 of the cap 20 is thrust into the thread part 1 of the container opening head 10, it will get over with slight angle of rotation of 20 degrees thru/or about 60 degrees, the elastically contacting piece 4a of the elastic leg 4 will get over, the gentle slope 3b of the projection 3 will be contacted, and a light resistance will be received. The cap seal part 7 welds by pressure to the container seal part 6, and seal is completed at the same time the elastically contacting piece 4a will overcome the top flat part 3a and will fall in the steep incline 3c soon, if a light resistance is resisted and rotation is continued succeeding. Then, the cap top plate section 11 contacts the container opening 9, and the cap skirt part 14 contacts the container shoulder 13 simultaneous or immediately after. By this, the cap 20 will maintain the stable sealed state.

[0052] Although it is the foundations which are completed when the elastically contacting piece 4a overcomes completion of bell-and-spigot wearing of a cap, it overcomes the flat part 3a of the crowning of a projection, the cap seal part 7 welds by pressure to the container seal part 6 and it is in a sealed state. The composition to which the cap top plate section 11 contacts the container opening 9, and the cap skirt part 14 contacts the container shoulder 13 simultaneously is preferred. Next, when removing a cap from a container, the elastically contacting piece 4a of the elastic leg 4 gets over promptly, the steep incline 3a of the projection 3 is contacted, and a comparatively strong resistance is received. The cap seal part 7 will secede from the container seal part 6, and a cap will also secede from a container at the same time the elastically contacting piece 4a will overcome the top flat part 3a and will arrive at the gentle slope 3b immediately after, if this resistance is resisted and rotation is continued. On the relation possessing the portion which overcomes a cap and has the elasticity of the elastic leg 4 or cap seal part 7 grade, although it is preferred that it is a product made from a plastic which has elasticity, even if a partner's container opening heads 10 are glass [ other than a plastic ], and a product made from an aluminum containing alloy, it is easy to be natural [ the heads ].

[0053]

[Effect of the Invention] When the container seal part provided in the periphery of the container opening head which constitutes the seal mechanism of this invention, and the cap seal part provided in the cap internal cylinder part contact by a sealed state, it is effective in sufficient sealing performance being acquired.

[0054] Therefore, wearing is completed with the one-touch feeling of small number of rotations



which is called 60 degrees or less and 90 degrees or less, or satisfaction is acquired by breaking away, and the user can get a feeling of attachment and detachment of a comfortable cap, and. With the screw of a cap of the tube vessel etc. which were constituted such, even if it is a case where enlarged the pitch  $p$ , and it detaches and attaches easily by little rotation, It is effective in sufficient sealing performance for a cap being acquired by the seal mechanism in which a click mechanism gets over, contact in response to elasticity, and a sealed state is maintained, and being able to prevent the slack of a screw. In the bell-and-spigot trailer of a thread part, though the crevice has arisen in the container opening and the top plate section, With the seal mechanism in which a click mechanism gets over, contact in response to elasticity, and a sealed state is maintained. Sufficient sealing performance for a cap will be acquired, when the seal currently stuck on the container opening before container opening was removed at the time of use, or when the sealant of the top plate section in a cap is removed, sufficient sealing performance is acquired and there is an effect which can improve the seal reliability of a cap. [0055] In the capping device of the container which has the click stop mechanism according to claim 1, the container opening head which constitutes a click mechanism overcomes this invention, and have provided the periphery thread part of the container opening head caudad, and a projection. When a cap internal cylinder part gets over and an elastic leg has the composition in which the inner circumference thread part of the cap internal cylinder part is provided caudad, Since it can get over and an elastic leg can be provided in the skirt part side of the inner circumference thread part lower part of a cap internal cylinder part, There is an effect which can manufacture a cap easily as compared with the composition which constitutes a click mechanism in the description of Claim 1 and in which it gets over, and a projection provides above the periphery thread part of a container opening head, and gets over, and the elastic leg is provided in the upper part inner part of the inner circumference thread part of a cap internal cylinder part.

[0056] There is an effect which can be made the small lightweight rational composition which filled the necessary and sufficient condition for this invention.

[0057] In the capping device of the container with which this invention has the click stop mechanism according to claim 1, 2, or 3, A click mechanism gets over, a projection gets over, and a near side consists of a comparatively loose inclined plane which goes to a projection crowning, and from a crowning the point by having the composition which consists of a comparatively steep inclined plane, When a container opening head gets over, a cap internal cylinder part overcomes a projection and an elastic leg gets over at the time of wearing, It can get over comparatively smoothly by the comparatively loose inclined plane which gets over and goes to a projection crowning from a near side, Get over, sometimes carry out click sudden rotation in a steep inclined plane, and a light click feeling is obtained, When rotating reversely in the direction which positive bolting torque is acquired by the steep inclined plane after wearing, and secedes from a cap, A steep inclined plane receives comparatively strong rotational resistance, and when locking of a cap is made certainly and secedes from a cap further, it is effective in the ability to secede from a cap at a stretch at a one-touch type with the click sudden rotation by a steep inclined plane.

[0058] In the capping device of the container with which this invention has the click stop mechanism according to claim 1, 2, 3, or 4, A click mechanism gets over, a projection gets over, and a near side consists of an inclined plane which goes to a projection crowning, and from a crowning the point by having the composition which consists of a steep incline which falls rapidly, It is effective in the ability to make more conspicuous the click feeling by click sudden rotation of projection riding \*\*\*\*\* accompanying cap attachment and detachment, the positive bolting torque by the steep inclined plane after wearing, locking of a cap, a feeling of attachment and detachment of a one-touch type, etc.

[0059] In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 5, By having the composition with which a click mechanism gets over and the flat part is provided in the crowning of the projection, Since a large distance of click rotation can be taken by the flat part which the click mechanism overcame and was provided in the crowning of the projection after overcoming a projection, The bolting



distance of a thread part binds tight only the part which becomes large, and it torque it not only can increase, but, Since the wide range in which contact with the container seal part and cap seal part in a seal mechanism is possible can be taken from the place which got over in the flat part and whose resistance was lost, As it gets over and resistance and seal contact resistance cannot be lapped, the rotational resistance of the cap by the lap of a click mechanism and a seal mechanism can be reduced, rotation of a cap can be made smooth, and there is an effect which can ensure a sealing function according to increase of the range of both seal parts which can be seal contacted.

[0060]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 6, By having the composition which formed the seal mechanism in which the container seal part provided in the periphery of the container opening head and the cap seal part provided in the cap internal cylinder part contacted by a sealed state in bell-and-spigot end position, Since a seal mechanism will be in a sealed state when a cap carries out click sudden rotation according to a click mechanism, thrusts and arrives at end position, it is effective in the ability to provide the capping device of the ideal container with which the sealing function and the click stop function agreed.

[0061]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 7, In said click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes a projection and an elastic leg overcomes, By having the composition which formed the seal mechanism in which the container seal part provided in the periphery of the container opening head and the cap seal part provided in the cap internal cylinder part contacted by a sealed state, In the click rotation completion position [ it gets over, it thrusts from a position and it reaches end position ] of a between which gets over, and overcomes a projection and an elastic leg overcomes, Since the seal part of a seal mechanism will be in a sealed state, when judging that bolting operation of the cap was completed by click rotation end position without thrusting to bell-and-spigot end position and not binding tight any more, it is effective in a sealed state being securable in a click stop.

[0062]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 8, During said section which gets over, and overcomes a projection and an elastic leg overcomes and which gets over, thrusts from a position and reaches end position, By having the composition which formed the seal mechanism in which the container seal part provided in the periphery of the container opening head and the cap seal part provided in the cap internal cylinder part contacted by a sealed state, During the section which gets over, and overcomes a projection and an elastic leg overcomes and which gets over, thrusts from a position and reaches end position, Since the seal part of a seal mechanism is maintained by the sealed state also in which position, it is effective in being concerned with the position of the cap after the completion of click rotation by a click mechanism, and a sealed state being maintained that there is nothing.

[0063]In the capping device of the container which has the click stop mechanism according to any one of claims 1 to 9 in this invention, The container seal part which rotated reversely the cap from bell-and-spigot end position, and was provided in the periphery of the container opening head before said position which gets over, and overcomes a projection and an elastic leg overcomes conversely, and the cap seal part provided in the cap internal cylinder part have the composition which formed the seal mechanism in which it contacted by a sealed state. From bell-and-spigot end position, rotate reversely a cap and Therefore, up to said position which gets over, and overcomes a projection and an elastic leg overcomes conversely. From the seal part of a seal mechanism being maintained by the sealed state also in which position. Like the case of the composition of Claim 10, it is concerned with the position of the cap after the completion of click rotation by a click mechanism, and even if there is nothing and it carries out counterrotation movement, unless it overcomes a click mechanism and secedes from it, a sealed state will be maintained.

[0064]In the capping device of the container with which this invention has the click stop

mechanism according to any one of claims 1 to 10, a click mechanism -- said -- it gets over, a projection is overcome and an elastic leg gets over -- it gets over and a position, By having the composition beginning from the position which is overcome by getting over and reaching a projection toward the crowning, and is produced in an elastic leg, and in which it gets over and resistance is lost rapidly, a click mechanism gets over, a projection is overcome, an elastic leg gets over, and click sudden rotation is started -- it getting over and a position, [ since it gets over and begins from a projection or the position which is overcome, is overcome regardless of the shape and composition of an elastic leg, and is produced in an elastic leg and in which it gets over and resistance is lost rapidly / in the technical scope ], There is an effect which can adopt publicly known various click mechanisms conventionally without being limited to the structure of working example, etc.

[0065]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 11, By having composition, wherein said position which gets over, and overcomes a projection, an elastic leg overcomes, and click rotation of a cap ends is bell-and-spigot end position of a thread part, Wearing of a cap will be completed, the sealed state of a seal mechanism will also be acquired, and it is effective in the ability to loosen and equip with a cap that there is nothing at the same time click rotation of a cap is completed, since the position which click rotation of a cap ends is bell-and-spigot end position of a thread part.

[0066]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 12, By having the composition to which a cap top plate contacts a container opening in the bell-and-spigot end position of a thread part, In the stage where the click mechanism got over, wearing elasticity powerful on a cap was obtained by elasticity in the bell-and-spigot end position of a thread part, and the sealed state by contact of a cap was acquired by the seal mechanism. When a cap top plate contacts a container opening, a container opening will also be sealed directly and high sealing performance is acquired, and it is effective in the ability to prevent the impossible bell-and-spigot operation beyond it.

[0067]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 13, By having composition, wherein a cap skirt part contacts a container shoulder in the bell-and-spigot end position of a thread part, If the pitch  $p$  is enlarged and the spiral of a screw is lessened with the screw of a cap of the tube vessel etc. which were constituted so that it might equip or break away with the one-touch feeling of small number of rotations, will become easy to produce backlash on a cap to a container opening head, but. In this case, when a cap skirt part contacts a container shoulder in the bell-and-spigot end position of a cap, it is effective in maintaining the mounting state where the cap was stabilized.

[0068]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 14, By having the composition forming the seal mechanism in which either of the container seal part provided in the periphery of the container opening head and the cap seal part provided in the cap internal cylinder part projects to the other party in the convex surface where curvature is smaller than the other party, and contacts by a sealed state, When either of the container seal part of a seal mechanism and a cap seal part projects to the other party in the convex surface where curvature is smaller than the other party and contacts by a sealed state, It compares, when contacting by a contact surface and contact resistance with big large field and field of curvature, The convex surface where curvature is small can project to the other party, and it can contact certainly and smoothly with the small resistance by a small contact surface, And since oneself or the other party is the shape which is easy to change elastically, it can perform easily absorbing a size error etc. and contacting by an adhesion condition, and it is effective in the size of the other party's touch-area width and the sealed state corresponding to boom hoisting being acquired.

[0069]When the thread part of the capping device of a container which has the click stop mechanism according to any one of claims 1 to 15 has the composition being a multistart thread, this invention, Can constitute so that the pitch  $p$  of a screw may be enlarged, the spiral of a screw may be lessened and it may equip or break away with the one-touch feeling of small

number of rotations by using a multistart thread, and. It is effective in the ability to acquire the fitting state stable when the idling angle which the opportunity of a part to have made it into multi-thread of screwing increases, and wearing takes it was able to be made small and the thread part of a container opening head and a cap contacted in the state of multi-thread.

[0070]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 16, By having composition, wherein bell-and-spigot wearing of a cap is completed at an angle with an angle of rotation of less than 360 degrees, When bell-and-spigot wearing of a cap is completed at an angle with an angle of rotation of less than 360 degrees, there is an effect which can be constituted so that it may equip or secede from a capping device with the one-touch feeling of small number of rotations.

[0071]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 17, By having the composition which forms in between the multistart thread of two sections which bell-and-spigot wearing of a cap completes at an angle with an angle of rotation of less than 180 degrees to the periphery thread part of a container opening head on both sides of the party line of a forming mold, Since the multistart thread of two sections is formed on both sides of the party line of a forming mold in between and a party line is not given to the screw thread and thread groove of a periphery thread part of a container opening head, a thread part with the smooth surface can be fabricated easily, and it is effective in good shaping of die releasing being attained.

[0072]In the capping device of the container with which this invention has the click stop mechanism according to claim 16, 17, or 18, By having composition, wherein the inner circumference thread part of a cap internal cylinder part consists of four sections to the multistart thread of two sections of the periphery thread part of a container opening head, Since the inner circumference thread part of a cap internal cylinder part consists of four sections to the multistart thread of two sections of the periphery thread part of a container opening head, with angle of rotation of so little cap. The opportunity for both to be engaged will arise and it is effective in the ability to acquire the engagement state where the screw thread of four sections prevented the backlash of the cap, and was stabilized in contact with the periphery thread part of a container opening head after engagement.

[0073]In the capping device of the container with which this invention has the click stop mechanism according to claim 16, 17, 18, or 19, By having the composition providing the protuberance form thread part which turns into a part of periphery thread part on the party line of a forming mold to the multistart thread of two sections of the periphery thread part of a container opening head, Since the partial thread part of the protuberance form which becomes a part of other periphery thread parts of two sections was provided on the party line of a forming mold, it can have sexual intercourse as the four-section screw formed in the cap side, and a four-section screw, and can prevent backlash, and. A thread part with the smooth surface can be fabricated easily, and it is effective in the ability to perform good shaping of die releasing bordering on a party line.

[0074]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 20, By having composition, wherein the inner circumference thread part of a cap internal cylinder part screws in the periphery thread part of a container opening head only while thrusting after the container opening head which constitutes a click mechanism gets over, a cap internal cylinder part gets over to a projection and an elastic leg contacts, and reaching end position, At the time of cap wearing, a thread part screws from the place which constitutes a click mechanism and where it gets over at, and gets over to a projection at, and an elastic leg contacts, overcome a click mechanism, reach bell-and-spigot end position, and wearing is completed, Conversely, since a cap will break away in the place which overcame the click mechanism by screwing of the thread part at the time of cap secession, A click mechanism will overcome the attachment and detachment with the screw of a cap, they will be limited only to the section, and can constitute attachment-and-detachment rotation and the engagement thread part of a cap to the minimum, and there is an effect which can detach and attach a cap like one-touch so much.

[0075]In the capping device of the container with which this invention has the click stop

mechanism according to claim 1 to 21, Since it has the composition consisting of two or more pieces of a resilient leg which have the elastically contacting piece in which it got over and the elastic leg provided the slit for every prescribed interval, By consisting of two or more pieces of a resilient leg which have the elastically contacting piece in which it got over and the elastic leg provided the slit for every prescribed interval, Even if a container opening head gets over and it sets up a projection for a long time greatly, the piece of a resilient leg can change greatly and it can respond, It gets over and an elastic leg gets over, and the comparatively large width W can be taken freely, it gets over, and wearing elasticity powerful on a cap is obtained by elastic force, and can prevent the slack of a screw, and. It is effective in increasing the contact width of the container seal part and cap seal part from which it is obtained certainly, and the feel which checks bell-and-spigot completion gets over, and constitutes the seal mechanism of this invention at the time of movement, and smooth and positive sealing performance being acquired. [0076]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 22, By having the composition consisting of an elastic deformation member which a cap internal cylinder part can get over, and a container opening head can get over to an elastic leg, and can project in elastic deformation, When [ of the container opening head which a cap internal cylinder part gets over and consists of an elastic deformation member to an elastic leg ] it gets over and a projection carries out elastic deformation, it is effective in the ability for an elastic leg to get over smoothly and overcome a projection.

[0077]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 23, By a cap internal cylinder part's getting over and having the composition characterized by the thing of a container opening head which it gets over and a projection consists of hard members, such as hard synthetic resin, glass, and metal, to an elastic leg, It is effective in the ability for a cap internal cylinder part to get over, and for an elastic leg to carry out elastic deformation, get over smoothly, and overcome a projection by consisting of an overcome hard member of a container opening head on which a projection tends to slide like a hard-synthetic-resin container, glassware, and metal vessels, such as aluminium alloy.

[0078]In the capping device of the container with which this invention has the click stop mechanism according to any one of claims 1 to 24, When a container seal part has the composition which consists of hard members, such as hard synthetic resin, glass, and metal, to the cap seal part of a seal mechanism, It is effective in a cap seal part carrying out elastic deformation, sticking smoothly, and maintaining a sealed state by consisting of a hard member on which the container seal part of a seal mechanism tends to slide like a hard-synthetic-resin container, glassware, and metal vessels, such as aluminium alloy.

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[Translation done.]

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#### DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The vertical section front view traveling through and showing the important section of one working example of this invention device.

[Drawing 2] The outline side view of the important section of working example of drawing 1.

[Drawing 3] The outline profile of other important sections of working example of drawing 1.

[Drawing 4] The explanatory view developing and showing the important section of one working example of this invention device.

[Drawing 5] The vertical section front view traveling through and showing the important section of other working example of this invention device.

[Drawing 6] The outline side view of the important section of working example of drawing 5.

[Drawing 7] The vertical section front view traveling through and showing the important section of other working example of this invention device.

[Drawing 8] The explanatory view developing and showing the important section of working example of drawing 7.

[Description of Notations]

1 The thread part of a container opening head

1A, 1B screw thread

1C and 1D Partial thread part

1a, 1b thread groove

2 Cap internal cylinder part

2A, 2B, 2C, 2D screw thread

2a, 2b, 2c, 2d thread groove

3 Get over and project.

3a A top flat part

3b Gentle slope

3c Steep incline

4 Get over and it is an elastic leg.

4a Elastically contacting piece

4b The piece of a resilient leg

5 Slit

6 Container seal part

7 Cap seal part

9 Container opening

10 Container opening head

11 Cap top plate

12 Sealant

13 Container shoulder

14 Cap skirt part

15 Cap outer tube section

16 Neck

17 Container drum part

20 Cap

E Seal width

W Flat part width

P Party line

[Translation done.]

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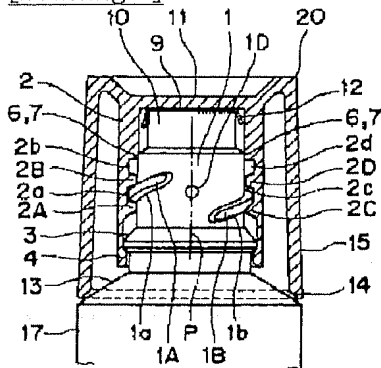
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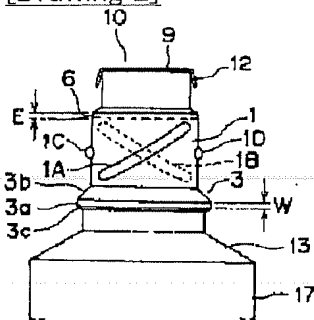
3.In the drawings, any words are not translated.

## DRAWINGS

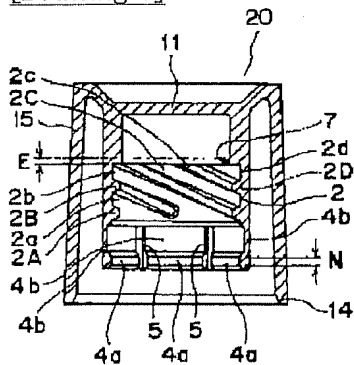
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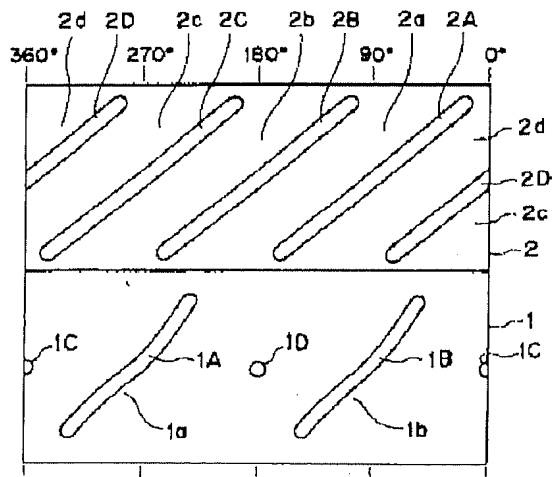
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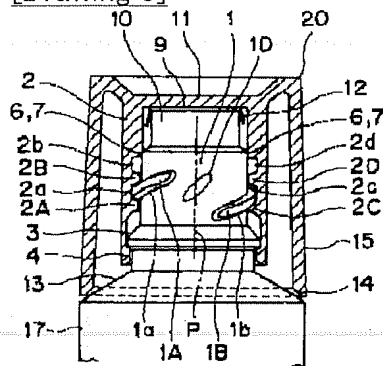
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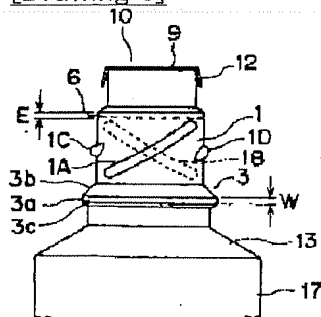
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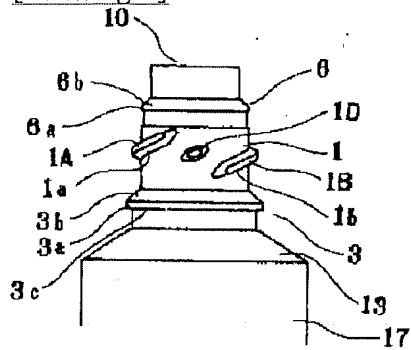
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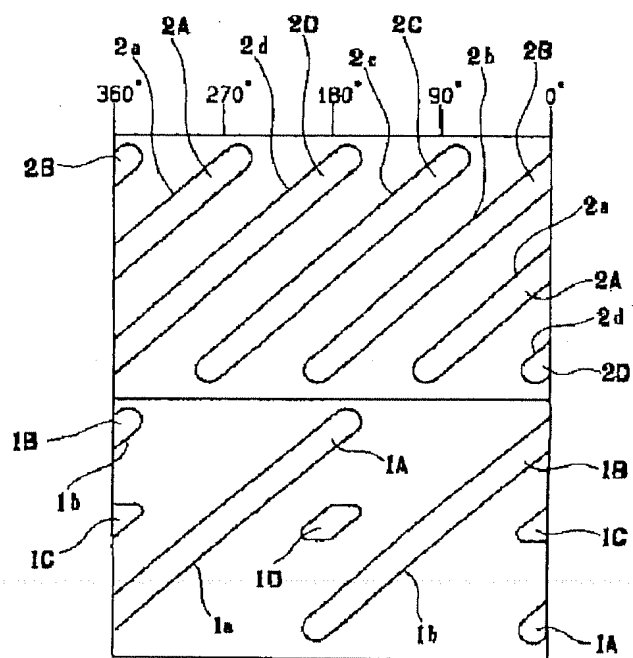
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]